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EXAMINER	
BODDIE, WILLIAM	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/664,080	YOSHIHARA, KEIICHIRO	
	Examiner	Art Unit	
	WILLIAM L. BODDIE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated September 12th, 2008 the Applicant amended claims 1, 11 and 20. Claims 1-24 are currently pending.

Response to Arguments

2. Applicant's arguments filed September 12th, 2008 have been fully considered but they are not persuasive.

3. On page 11 of the Remarks, the Applicant argues that Palalau teaches away from the sliding operations of Stephan. As evidence of this, the Applicant points to Palalau's disclosure of a plurality of feature group switches.

While the Examiner agrees that this is a part of the Palalau disclosure, this evidence is insufficient to show a teaching away. Palalau would need to discuss why the sliding operation is a decidedly worse-method of input in touch screens. Absent any discussion in Palalau regarding such a method of input, Palalau is incapable of teaching away.

4. On page 12 of the Remarks, the Applicant argues that Palalau and Stephan are incompatible because performing a sliding operation on Palalau's device would merely result in triggering a number of switches.

It is the Examiner's understanding that the triggering of a number of switches is very similar, if not directly analogous, in the manner of detecting sliding gestures. The user's finger sliding across the surface triggers sensors, these sensors are interpreted as a sliding gesture and the proper functionality is performed. In short Palalau's device is not seen as being incompatible with the adjustment of a value.

5. Additionally on page 12, the Applicant argues that there is no motivation to combine the sliding operations of Stephan with Palalau.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, sliding operations are well-known in the art and users are comfortable with the operation, additionally Stephan discloses, that the sliding operation allows for the user to more quickly and accurately reach a desired value or location (Stephan, col. 9, lines 10-30).

6. The Applicant also argues that Rowe and Palalau are unrelated.

In response to applicant's argument that Rowe and Palalau are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Rowe and Palalau are both directed to the same field of endeavor namely touch sensor device orientation and layout. More specifically both deal with the design and interpretation of touch inputs into touchpads.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning on page 12, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

7. On pages 12-13 of the Remarks, the Applicant traverses on the grounds that Rowe does not disclose "a fixed reference position...graphically identified on said display surface and located between a vertex and a center of one of said concave portion and said convex portion."

The Examiner must respectfully disagree. As shown below in the updated rejections, Palalau discloses a graphically identified reference position on the display surface at the claimed location. Palalau merely fails to disclose that said reference position is fixed. Rowe discloses such a fixed reference position that is also graphically identified.

While true, Rowe does not disclose a fixed reference position that is graphically identified and located between a vertex and a center of one of said concave or convex portions, Rowe is not relied upon to teach all of these limitations. Rowe is merely included for the teaching of a fixed reference position.

8. Also on page 13, the Applicant argues that Rowe fails to teach "an adjustment value in accordance with a direction of a slide operation along said guide portion from the fixed reference position."

The Examiner must respectfully disagree. A reasonable interpretation of the above phrase, includes that the direction of the slide operation is *from* the fixed reference position. In other words, all slide operations begun from the fixed reference position generate an adjustment value in accordance with the direction of the slide. Rowe is seen as clearly disclosing such limitation in figure 3.

9. Finally on page 13, the Applicant argues that Rowe does not teach control of an adjustment value after the reference position is depressed.

The Examiner must respectfully disagree. Step 122 in figure 3 of Rowe, determines control of the adjustment value based on whether the user has pressed the reference position or not.

10. On page 15 of the Remarks, the Applicant traverses the alternate rejection of claim 1, on the grounds that Yamaguchi, Rowe and Stephan are non-analogous art and hindsight was used in the combination.

In response to applicant's argument that Yamaguchi, Rowe and Stephan are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443

(Fed. Cir. 1992). In this case, Rowe, Stephan and Yamaguchi are both directed to the same field of endeavor namely touch sensor device orientation and layout.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning on page 12, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

11. On pages 15-16, the Applicant argues that the motivation to include the textured edges of Stephan on the curved touchpad of Yamaguchi are based on hindsight and not well-known.

First the Examiner would like to point out that the combination is not to incorporate the textured edges of Stephan into the touchpad of Yamaguchi, but rather to incorporate the curved edges of Yamaguchi onto the device of Stephan. As such the motivations are seen as sufficient and one of ordinary skill would have been motivated by both aesthetics and abrasiveness of the tactile cues to form such a combination.

The Applicant appears to additionally contend that the benefit of textured edges of Stephan will be lost with the Yamaguchi replacement. The Examiner must respectfully disagree. It will still be readily apparent to the user that their finger is located on a unique side of the device, due to the curved surface.

The Applicant again argues that Rowe does not teach the newly added limitations. The Applicant is directed to the above discussion concerning this previously discussed arguments.

12. Pages 18-19, merely argue that the cited art in the rejection of claims 5 and 8-10 is insufficient to teach all of the claimed limitations. As discussed above, the art is seen as sufficient and the rejections are maintained.

13. On pages 20-26 of the Remarks, the Applicant merely restates the same arguments discussed above. As these arguments are similar, the Applicants are directed to the above discussions with respect to each.

14. On page 27, the Applicant argues that Takahashi does not disclose storage of a current adjustment value and that there is no predetermined time period.

The Examiner must respectfully disagree. The storage unit of Takahashi is to be included in the combination of the citied art and it is the adjustment value of the main device that is to be stored therein. Additionally, the Applicant is directed to the "no path" from 104 in figure 7 of Takahashi. It should be apparent from this that if after a predetermined time period movement is not detected the device restarts the timer. Discussion of the operation is found in column 3, lines 25-45.

15. As shown above the rejections are seen as sufficient and reasonable. The rejections are therefore updated to represent the newly added limitations and are maintained.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palalau et al. (US 6,373,472) in view of Stephan (US 5,748,185) and further in view of Rowe (US 6,559,833).

With respect to claim 1, Palalau discloses, an electronic equipment (fig. 1) comprising: a display device configured to display information (36 in fig. 2b) and including a display surface (clear from fig. 2b); a touch sensor arranged on at least part of the display surface (col. 3, lines 61-67); a guide portion (note the outer edges of the touch screen) configured to fringe the surface with a line configured by one of a concave portion and a convex portion as a whole, including a reference position (each function 36a-f in fig. 2b) on a surface of the touch sensor graphically identified on said display surface (note the graphics in fig. 2b, for example) and located between a vertex and a center of one of said concave portion and said convex portion (clear from fig. 2b); and

a controller (120 in fig. 12a) configured to control a user interface (col. 4, lines 3-8) in accordance with a touch screen location corresponding to a reference position.

Palalau does not expressly disclose, that the guide portion protrudes from a surface of the touch sensor, nor that the controller is configured to control an adjustment

value in accordance with a direction of a slide operation along said guide portion from the reference position.

Stephan discloses, an electronic equipment (fig. 13) comprising: a display device configured to display information (laptop screen in fig. 13) and including a display surface (284 in fig. 13); a touch sensor (284, 286, 288 in fig. 13) arranged on at least part of the display surface (clear from fig. 13); a guide portion (tactile cues; col. 12, lines 35-43) configured to protrude from a surface of the touch sensor and to fringe the surface with a line (192, 194 in fig. 7); and

a controller (110 in fig. 3) configured to control an adjustment value (direction of movement and increment of movement) in accordance with a direction of a slide operation along said guide portion from a reference position (fig. 4-5; also note col. 7, lines 38-66; which notes that the coordinates transmitted are relative to a reference position).

Palalau and Stephan are analogous art because they are both from the same field of endeavor namely visual cues to augment touch sensor devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the textured edges and sliding operations of Stephan with the curved edges taught by Palalau.

The motivation for doing so would have been to communicate to the user, which touch region they are located in, without requiring the user to look down (Stephan; col. 10, lines 14-20).

To summarize, Stephan teaches applying tactile cues along the sides of touch screen displays. Stephan does not go in-depth into the numerous shapes, sizes and types of tactile cues that can be provided on the sides of the touch screen display. Palalau teaches a curved edge touch screen. It would have been obvious to include the protruding tactile cues and sliding operation that Stephan discloses in the curved touchscreen embodiment of Palalau.

Neither Stephan nor Palalau expressly disclose wherein the reference position is fixed.

Rowe discloses, a touchpad (fig. 2) wherein a fixed reference position (25 in fig. 2) graphically identified on a touchpad (col. 3, lines 15-20) is located between a middle of the bottom of the touchpad and a center of the bottom of the touchpad and a controller is configured to control an adjustment value in accordance with a direction of a slide operation from the fixed reference position (fig. 3);

wherein said adjustment value is controlled after said fixed reference position is depressed by a touch operation (122 in fig. 3).

Rowe, Palalau and Stephan are analogous art because they are both from the same field of endeavor namely touch sensor device orientation and layout.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the relative reference position of Stephan and Palalau with the fixed reference position of Rowe.

The motivation for doing so would have been to provide a more intuitive interface for the user as well as to provide for fine movements (Rowe; col. 1, lines 30-37).

With respect to claim 4, Stephan, Rowe and Palalau disclose, the electronic equipment as claimed in claim 1 (see above).

Palalau, when combined with Stephan and Rowe, further discloses, a notification unit (22 in fig. 1) configured to provide a notification that the reference position is depressed (Palalau teaches that depression of a reference position (function group in 28) alters the displayed graphics on screen 22, thereby providing notification to the user that the position has been depressed. Col. 4, lines 45-52, for example).

18. Claims 1-3, 6-7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Yamaguchi et al. (US 7,143,355) and further in view of Rowe (US 6,559,833).

With respect to claim 1, Stephan discloses, an electronic equipment (fig. 13) comprising: a display device configured to display information (laptop screen in fig. 13) and including a display surface (284 in fig. 13); a touch sensor (284, 286, 288 in fig. 13) arranged on at least part of the display surface (clear from fig. 13); a guide portion (tactile cues; col. 12, lines 35-43) configured to protrude from a surface of the touch sensor and to fringe the surface with a line (192, 194 in fig. 7), including a reference position on a surface of the touch sensor graphically identified on said display surface (note the graphics in fig. 2b, for example) and located between a vertex and a center of said line (col. 7, lines 38-66; Stephan discloses transmitting x and y coordinates that are indicative of the relative movement of the contact point (col. 8, lines 19-22)); and

a controller (110 in fig. 3) configured to control an adjustment value (direction of movement and increment of movement) in accordance with a direction of a slide

operation along said guide portion from the reference position (fig. 4-5; also note col. 7, lines 38-66; which notes that the coordinates transmitted are relative to a reference position).

Stephan does not expressly disclose that the guide portion is configured by one of a concave portion and a convex portion as a whole.

Yamaguchi discloses a guide portion (rounded edge of 6 in fig. 22) configured to protrude from a surface of a touch sensor (6 in fig. 22) and to fringe the surface with a line configured by a concave portion as a whole (clear from fig. 22; also note col. 12, lines 48-51), including a reference position on a surface of the touch sensor located between a vertex and a center of one of said concave portion (each switching segment is seen as a reference position).

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the textured edges of Stephan with the curved edges taught by Yamaguchi.

The motivation for doing so would have been due to aesthetic design choices, as well as to offer the user a less abrasive form of tactile feedback.

To summarize, Stephan teaches applying tactile cues along the sides of touch *screen* displays. Stephan does not go in-depth into the numerous shapes, sizes and types of tactile cues that can be provided on the sides of the touch screen display. Yamaguchi teaches a curved edge on a touch pad.. It would have been obvious to replace the jagged tactile cues that Stephan discloses with the more structured and smoother curved edge of Yamaguchi.

Neither Stephan nor Yamaguchi expressly disclose wherein the reference position is fixed.

Rowe discloses, a touchpad (fig. 2) wherein a fixed reference position (25 in fig. 2) graphically identified on a touchpad (col. 3, lines 15-20) is located between a middle of the bottom of the touchpad and a center of the bottom of the touchpad and a controller is configured to control an adjustment value in accordance with a direction of a slide operation from the fixed reference position (fig. 3);

wherein said adjustment value is controlled after said fixed reference position is depressed by a touch operation (122 in fig. 3).

Rowe, Yamaguchi and Stephan are analogous art because they are both from the same field of endeavor namely touch sensor device orientation and layout.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the relative reference position of Stephan and Yamaguchi with the fixed reference position of Rowe.

The motivation for doing so would have been to provide a more intuitive interface for the user as well as to provide for fine movements (Rowe; col. 1, lines 30-37).

With respect to claim 2, Stephan, Rowe and Yamaguchi disclose, the electronic equipment in claim 1 (see above).

Rowe further discloses, wherein the controller (5 in fig. 1) sets the adjustment value to a predetermined reference value when the fixed reference position is depressed (should be clear from col. 4, lines 50-55; wherein it is disclosed that the rate

of scrolling (adjustment value) is determined based on the distance from the reference position).

With respect to claim 3, Stephan, Yamaguchi and Rowe disclose, the electronic equipment as claimed in claim 2 (see above).

Rowe further discloses, where the controller changes the adjustment value (rate of scrolling) from a reference value when the slide operation is performed after the fixed reference position is depressed (again this limitation should be clear from col. 4, lines 50-55; see above discussion in claim 2 rejection).

With respect to claim 6, Stephan, Rowe and Yamaguchi disclose, the electronic equipment as claimed in claim 1 (see above).

Stephan further discloses, wherein said touch sensor includes one of a display function (pan and scroll) and a switch function (note the discussion of a menu bar or a tool bar; col. 12, lines 50-53).

With respect to claim 7, Stephan, Rowe and Yamaguchi disclose, the electronic equipment as claimed in claim 1 (see above).

Stephan further discloses, wherein said touch sensor (288 and 286 in fig. 13) arranged on said at least a part of said display surface (284 in fig. 13) is configured to be proximate to said guide portion (note the relationship between the guide portion, 192, and the touch sensor in fig. 7; as discussed by Stephan this relationship will be carried over to the touchscreen embodiment; col. 12, lines 40-42).

With respect to claim 20, claim 20 is seen as containing the same limitations as those recited in claim 1. Therefore claim 20 is rejected on the same merits shown above in the rejection of claim 1.

19. Claim 5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Yamaguchi et al. (US 7,143,355) and Rowe (US 6,559,833) and further in view of Vanderheiden (US 6,049,328).

With respect to claim 5, Stephan, Rowe and Yamaguchi disclose, the electronic equipment of claim 1 (see above).

Stephan further discloses, that the functions to which the user can control may be varied based on the particular application program (col. 12, lines 53-55).

However, neither Stephan, Rowe nor Yamaguchi expressly disclose, controlling an adjustment value (On or Off) of an output level of an acoustic signal (col. 6, lines 29-45).

Vanderheiden discloses, a touch screen device having a concave and convex guide portion (200 in fig. 2), wherein the sliding motion controls an adjustment value (On or Off) of an output level of an acoustic signal (col. 6, lines 29-45).

Vanderheiden, Rowe, Yamaguchi and Stephan are analogous art because they are all from the same field of endeavor namely tactile and visual cues to augment touch sensor devices.

It would have been obvious to one of ordinary skill in the art to enable the touch screen device of Rowe, Yamaguchi and Stephan to control an adjustment value of an acoustic signal as taught by Vanderheiden.

The motivation for doing so would have been to make the device more user-friendly for use by people with disabilities, i.e. the visually impaired (Vanderheiden; col. 1, lines 8-11).

With respect to claim 8, Stephan, Rowe and Yamaguchi disclose, the electronic equipment as claimed in claim 1 (see above).

Rowe further discloses, visual cues (25 in fig. 2) wherein said visual cues correspond to said fixed reference position (col. 3, lines 15-20)

Neither Stephan, Rowe nor Yamaguchi expressly disclose that the graphical images are displayed on a display device that correspond to said fixed reference position.

Vanderheiden discloses, a graphical image that corresponds to a fixed reference position (center icon 46" in fig. 2; opposite the indent).

Vanderheiden, Stephan, Rowe and Yamaguchi are analogous art because they are from the same field of endeavor namely, touch screen functionality and interfaces.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the graphical icon of Vanderheiden in the scroll bar graphics of Stephan, Rowe and Yamaguchi.

The motivation for doing so would have well known advantages including allowing the user to quickly orient themselves when viewing the touch screen.

With respect to claim 9, Stephan, Vanderheiden, Rowe and Yamaguchi disclose the electronic equipment as claimed in claim 8 (see above).

Vanderheiden further discloses, wherein the graphical image represents an initial value in a parameter adjustment range (col. 11, lines 58-63).

With respect to claim 10, Stephan, Yamaguchi, Rowe and Vanderheiden disclose, the electronic equipment as claimed in claim 9 (see above).

Stephan as modified by Yamaguchi, Rowe and Vanderheiden further discloses, second and third graphical images (Stephan; up/down arrows in fig. 11) displayed on said display device in said surface of said touch sensor on either side of said graphical image (Stephan; outlined box in fig. 11, for example), wherein said second and third graphical images represent one of a value to be increased (up arrow) and a value to be decreased (down arrow) from said initial value in a parameter adjustment range.

20. Claims 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Palalau et al. (US 6,373,472) and further in view of Rowe (US 6,559,833).

With respect to claim 11, Stephan discloses, a method of controlling electronic equipment (figs. 4-5), a touch sensor (284,286,288 in fig. 13) arranged on at least a part of a display surface (laptop screen in fig. 13), a guide portion (192 in fig. 7; col. 12, lines 40-41) configured to protrude from a surface of said touch sensor and to fringe said surface with a line, including a reference position on a surface of the touch sensor graphically identified on said display surface (note the graphics in fig. 2b, for example) and located between a vertex and said line (col. 7, lines 38-66; Stephan discloses transmitting x and y coordinates that are indicative of the relative movement of the contact point (col. 8, lines 19-22)), said method comprising:

guiding a finger along said guide portion (col. 3, lines 57-64); and

receiving a contact input on said surface of said touch sensor based on guiding said finger along said guide portion (col. 8, lines 10-19; for example).

Stephan does not expressly disclose that the guide portion is configured by one of a concave portion and a convex portion as a whole, including locating a reference position between a vertex and a center of one of said concave and said convex portion, said method comprising:

guiding a finger along said guide portion to said reference position; and,

receiving a contact input on said surface of said touch sensor adjacent to said reference position based on guiding said finger along said guide portion to said reference position.

Palalau discloses a guide portion (note the outer edges of the touch screen) configured to fringe the surface with a line configured by one of a concave portion and a convex portion as a whole (clear from fig. 2b), including a reference position (each function 36a-f in fig. 2b) on a surface of the touch sensor located between a vertex and a center of one of said concave portion and said convex portion (clear from fig. 2b), furthermore;

guiding a finger along said guide portion to said reference position (col. 3, lines 59-64) and,

receiving a contact input on said surface of said touch sensor adjacent to said reference position based on guiding said finger along said guide portion to said reference position (col. 3, line 64 – col. 4, line 8).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the curved edges and reference positioning, taught by Palalau, in the touch screen device of Stephan.

The motivation for doing so would have been aesthetic design choices, as well as to offer the user a less abrasive form of tactile feedback.

To summarize, Stephan teaches applying tactile cues along the sides of touch screen displays. Stephan does not go in-depth into the numerous shapes, sizes and types of tactile cues that can be provided on the sides of the touch screen display. Palalau teaches a curved edge touch screen. It would have been obvious to include the curved guide edges and reference positioning that Palalau discloses in the protruding guide touchscreen embodiment of Stephan.

Neither Stephan nor Palalau expressly disclose wherein the reference position is fixed.

Rowe discloses, a touchpad (fig. 2) wherein a fixed reference position (25 in fig. 2) graphically identified on said touchpad (col. 3, lines 15-20) is located between a middle of the bottom of the touchpad and a center of the bottom of the touchpad and a controller is configured to control an adjustment value in accordance with a direction of a slide operation from the fixed reference position (fig. 3);

wherein said adjustment value is controlled after said fixed reference position is depressed by a touch operation (122 in fig. 3).

Rowe, Palalau and Stephan are analogous art because they are both from the same field of endeavor namely touch sensor device orientation and layout.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the relative reference position of Stephan and Palalau with the fixed reference position of Rowe.

The motivation for doing so would have been to provide a more intuitive interface for the user as well as to provide for fine movements (Rowe; col. 1, lines 30-37).

With respect to claim 14, Stephan, Rowe and Palalau disclose, the method of controlling electronic equipment as claimed in claim 11 (see above).

Stephan, as modified by Rowe and Palalau, discloses, receiving sliding contact input on said surface of said touch sensor adjacent to said fixed reference position (Palalau; col. 3, line 64 – col. 4, line 8) and,

inputting said adjustment value to a controller based on receiving said sliding contact input (Palalau; col. 6, lines 21-24).

With respect to claims 15 and 16, Stephan, Rowe and Palalau disclose, the method of controlling electronic equipment as claimed in claim 14 (see above).

Stephen further discloses, wherein receiving sliding contact input on said surface of said touch sensor in a first direction inputs a positive adjustment value to said controller, in a second direction inputs a negative adjustment value (130 in fig. 4, 140, 142 in fig. 5; col. 7, lines 39-59).

21. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Palalau et al. (US 6,373,472) and Rowe (US 6,559,833) and further in view of Vanderheiden (US 6,384,743).

With respect to claim 12, Stephan, Rowe and Palalau disclose, the electronic equipment as claimed in claim 11 (see above).

Stephan further discloses, visual cues (254, 256 in fig. 11) to the user as to the delineations in the regions (col. 12, lines 40-42).

Palalau further discloses, a graphical image (audio, climate etc. in fig. 2b) displayed on said display device in said surface of said touch sensor (36 in fig. 2b), wherein said graphical image corresponds to said reference position (note the above rejection of claim 11, wherein the reference position is seen as each function in the display).

Neither Stephan, Rowe nor Palalau expressly disclose that the graphical image represents an initial value in a parameter adjustment range or that it corresponds to said fixed reference position.

Vanderheiden discloses, a graphical image that represents an initial value in a parameter adjustment range and corresponds to a fixed reference position (center icon 46" in fig. 2; opposite the indent).

Vanderheiden, Stephan, Rowe and Palalau are analogous art because they are from the same field of endeavor namely, touch screen functionality and interfaces.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the graphical icon of Vanderheiden in the scroll bar graphics of Stephan, Rowe and Palalau.

The motivation for doing so would have well known advantages including to allow the user to quickly orient themselves when viewing the touch screen.

With respect to claim 13, Stephan, Palalau, Rowe and Vanderheiden disclose, the electronic equipment as claimed in claim 12 (see above).

Stephan as modified by Palalau, Rowe and Vanderheiden further discloses, second and third graphical images (Stephan; up/down arrows in fig. 11) displayed on said display device in said surface of said touch sensor on either side of said graphical image (Stephan; outlined box in fig. 11, for example), wherein said second and third graphical images represent one of a value to be increased (up arrow) and a value to be decreased (down arrow) from said initial value in a parameter adjustment range.

22. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Palalau et al. (US 6,373,472) and Rowe (US 6,559,833) and further in view of Serravalle, Jr. (US 4,631,525).

With respect to claim 17, Stephan, Rowe and Palalau disclose, the method of controlling electronic equipment as claimed in claim 11 (see above).

Neither Stephan, Rowe nor Palalau expressly disclose, storing a present value of an adjustment parameter in response to receiving said contact input on said surface of said touch sensor adjacent to said reference position.

Serravalle, Jr., discloses, storing in a register (98 in fig. 4) the present value of an adjustment parameter in response to receiving a contact input on a surface of a touch sensor (40, 60 in fig. 4) adjacent to a reference position (0 label for example).

Serravalle, Jr., Stephan, Rowe and Palalau are analogous art because they are both from the same field of endeavor namely touch sensor use and implementation.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the present value of Stephan, Rowe and Palalau as taught by Serravalle, Jr.

The motivation for doing so would have been to allow the comparison of two different locations of the user's touch (Serravalle, Jr.; col. 11, line 60 – col. 12, line 11).

To further explain, the combination of Serravalle, Jr. and Rowe would result in a teaching of storing a present value an adjustment parameter in response to receiving a contact input on the surface of a touch adjacent to the *fixed* reference position.

With respect to claim 18, Stephan, Palalau, Rowe and Serravalle, Jr. disclose, the method of controlling electronic equipment as claimed in claim 17 (see above).

Stephan further discloses, determining whether said slide operation is performed on said surface of said touch sensor (123, 125, 127 in fig. 4).

With respect to claim 19, Stephan, Palalau, Rowe and Serravalle, Jr. disclose, the method of controlling electronic equipment as claimed in claim 18 (see above).

Serravalle, Jr. further discloses, adding said adjustment value to said stored present value of an adjustment parameter in response to determining whether said slide operation is performed (col. 12, lines 28-37); and

controlling an output parameter based on adding said adjustment value to said stored present value of an adjustment parameter (col. 2, lines 22-30).

23. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephan (US 5,748,185) in view of Yamaguchi et al. (US 7,143,355) and further in view of Rowe (US 6,559,833) and Takahashi (US 4,954,967).

With respect to claim 21, Stephan, Yamaguchi and Rowe disclose, the electronic equipment according to claim 1 (see above).

Neither Stephan, Yamaguchi nor Rowe expressly disclose, a storage unit which stores a current adjustment value when the fixed reference position is depressed.

Takahashi discloses a storage unit (21 in fig. 4) which stores a current adjustment value when a fixed reference position is depressed (102 in fig. 7).

Takahashi, Stephan, Rowe and Yamaguchi are analogous art because they are both from the same field of endeavor namely touch sensor use and implementation.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the storage unit of Takahashi in the device of Stephan, Rowe and Yamaguchi for the well-known benefit of comparison of the current adjustment value with future movements. Thereby determination of movement is achieved.

With respect to claim 22, Stephan, Yamaguchi, Takahashi and Rowe disclose, the electronic equipment according to claim 21 (see above).

Takahashi further discloses, a timer (102 in fig. 7) which counts a predetermined time period from a time when a reference position is depressed (104 in fig. 7),

wherein the controller controls the adjustment value in accordance with the slide operation starting during the predetermined time period (106-114 in fig. 7).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the timer of Takahashi in the device of Stephan, Rowe and Yamaguchi to allow better determination in the direction of movement (Takahashi; col. 3, lines 37-42).

With respect to claim 23, Stephan, Yamaguchi, Takahashi and Rowe disclose, the electronic equipment according to claim 22 (see above).

Stephan, when combined with Yamaguchi, Takahashi and Rowe, further discloses, when the timer finishes counting of the predetermined time period, the controller sets the adjustment value to the current adjustment value stored in the storage unit if no slide operation is performed during the predetermined time period (Takahashi; No path of 104 in fig. 7; col. 3, lines 25-37).

With respect to claim 24, Stephan, Yamaguchi, Takahashi and Rowe disclose, the electronic equipment according to claim 22 (see above).

Stephan, when combined with Yamaguchi, Takahashi and Rowe, further discloses, when the timer finishes counting of the predetermined time period, the controller sets the adjustment value to a predetermined reference value if no slide operation is performed during the predetermined time period (Takahashi; No path of 104 in fig. 7; col. 3, lines 25-37).

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William L Boddie/
Examiner, Art Unit 2629
12/24/08

/Sumati Lefkowitz/
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